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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,413	04/20/2004	Hatsuo Shimizu	17648	4531

23389 7590 11/18/2005

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EXAMINER	
SMITH, PHILIP ROBERT	
ART UNIT	**PAPER NUMBER**
3739	

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/828,413	SHIMIZU ET AL.	
	Examiner	Art Unit	
	Philip R. Smith	3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/20/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

[01] Claims 2 & 19 are objected to because of the following informalities: the phrase "on contents" is indefinite, although the scope of the claim appears to be clear. Appropriate correction is required.

Claim Rejections - 35 USC § 103

[02] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[03] Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gazdzinski (2001/0051766) in view of Ahn et al (2002/0177884).

[04] With regard to claims 1, 10 & 18: Gazdzinski discloses a wireless in-vivo information acquiring system comprising:

[04a] an external device ("external monitoring and control device," or "MCD 800," [0150]) that is disposed on the outside of the body of the patient,

- wherein the external device includes a power source ("power transfer circuit 700," [0167]) that outputs a power-supply signal for supplying power to a body-insertable device that is inserted into a body of a patient to execute a predetermined function;

- a drive control signal (signals generated to "control the operation of ... the probe 300 via data signals transmitted to the probe during startup and operation," generated by "microprocessor 906," [0171]) for controlling the predetermined function of the body-insertable device on the power supply signal from the power source;
- a power supply signal transmitting unit ("coil 710 of power transfer terminal 712," [0167]) that wirelessly supplies the power supply signal from the power source to the body-insertable device that is inserted into the body;

[04b] a body-insertable device that is inserted into a body of a patient comprising:

- a function executing unit that executes a predetermined function to acquire in-vivo information on the body of the patient ("the CCD array is driven by the parallel and serial drivers 516, 518 based on a user-defined clock signal output from the clock/timer 524 and controlled by the microcontroller 520," [0160]);
- a power-supply signal receiving unit ("coil 714 of the power transfer terminal(s) 716," [0167]) that receives a power-supply signal wirelessly transmitted from outside as a power for driving the function executing unit; and
- a control signal detecting unit that controls the function executing unit based on the drive control signal detected ("microcontroller 520,"

[0155]).

[05] Gazdzinski does not disclose a control signal superposing unit (that composes the external device) that superposes the drive control signal for controlling the predetermined function of the body-insertable device on the power supply signal from the power source. Nor does Gazdzinski disclose that the control signal detecting unit (composing the body-insertable device) detects the drive control signal superposed on the power supply signal and controls the function based on the drive control signal detected.

[06] Ahn discloses the following in [0046]:

> FIG. 8 is a functional block diagram of another embodiment of a charging system in accordance with the present invention. The embodiment of FIG. 8 is similar to those in FIGS. 6 and 7 except that filters are provided in primary and secondary sides instead of the antennas. The filters 810, 820 superpose and retrieves a data signal on and from the power signal that is inductively transmitted form the primary winding to the secondary winding. Known methods of using power line for data communication can be utilized for embedding data in the power signal. For example, an information signal in a different bandwidth is combined with the power signal, transmitted to the other side and recovered by separating the information signal form the power signal.

[07] At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the drive control signal and power supply signal disclosed by Gazdzinski be transmitted by a single inductive coupling, as disclosed by Ahn, as opposed to a pair of inductive couplings (one for each signal) as disclosed by Gazdzinski. This would require that the external device disclosed by Gazdzinski include a control signal superposing unit ("filter 810" as disclosed by Ahn); and that the control signal detecting unit disclosed by Gazdzinski ("microcontroller 520," as noted above) further comprise some structure which allows it to detect the drive

control signal superposed on the power supply signal ("filter 820" as disclosed by Ahn).

[08] A skilled artisan would be motivated combine these teachings in order to reduce the number of coils within the body-insertable device, components which are known to be relatively bulky and massive in comparison to filters such as those disclosed by Ahn.

[09] With regard to claims 2 & 19: As noted above, Gazdzinski discloses a drive control signal (signals generated to "control the operation of ... the probe 300 via data signals transmitted to the probe during startup and operation," generated by "microprocessor 906," [0171]) for controlling the predetermined function of the body-insertable device on the power supply signal from the power source. This inherently requires a control information input unit that outputs the drive control signal upon receiving control information about controlling the function executing unit.

[10] With regard to claims 3 & 11: The "filter 820" disclosed by Ahn is essentially a separating unit that separates the drive control signal from the power supply signal from the external device, and supplies the drive control signal to the control signal detecting unit.

[11] With regard to claims 4 & 12: Ahn discloses that "power transmitted from the primary coil 620 is converted to direct current by a rectifier (an AC/DC converter 645) and then made constant voltage by a charging means 650 and a control

means 660 so as to charge a battery 665." ([0043]). It is clear to a skilled artisan that the battery disclosed by Gazdzinski ("used to power the device during its progression through the patient either in conjunction with or in lieu of the aforementioned inductive power transfer circuit," [0044]) is inherently capable of such use.

[12] With regard to claims 5, 13 & 20: As noted above, Ahn discloses in [0046] that "an information signal in a different bandwidth is combined with the power signal, transmitted to the other side and recovered by separating the information signal form the power signal."

[13] With regard to claims 6-7 & 14-15: As noted above, the function executing unit disclosed by Gazdzinski is a sensor that acquires in-vivo information specific to a portion to be diagnosed in the body of the patient, including an imaging unit ("CCD array") that captures an image of the portion to be diagnosed in the body of the patient. Gazdzinski further discloses that the control information received by the control information input unit includes information on number of frames to be captured by the imaging unit per predetermined time, and the drive control signal output from the control information input unit includes a signal for controlling the number of frames to be captured by the imaging unit per predetermined time ("the CCD array is driven by the parallel and serial drivers 516, 518 based on a user-defined clock signal output from the clock/timer 524 and controlled by the microcontroller 520," [0160]).

[14] With regard to claims 8-9 & 16-17: Gazdzinski further discloses in [0171] that "The

probe microcontroller 520 ... generates the necessary signals to the various probe components (based on its internal programming) so as to initiate operation of the LED 504, collection of image data via the CCD array 402, and subsequent processing/transfer of the collected data." The "LED 504" is an illuminating unit that emits light to illuminate at least the portion to be diagnosed in the body of the patient. The "initiat[ion of] operation" disclosed by Gazdzinski inherently requires a system controller that controls a state of power supply for driving the function executing unit. The initiation of the illumination operation is inherently controlled by the control information input to the system controller, and the drive control signal output from the system controller inherently includes a signal for controlling power supply and illumination.

[15] 11. The body-insertable device according to claim 10, further comprising a separating unit that separates the drive control signal from the power supply signal received, and supplies the drive control signal to the control signal detecting unit.

[16] 12. The body-insertable device according to claim 11, further comprising a power accumulating unit that receives the power supply signal after the separating unit separates the drive control signal.

[17] 13. The body-insertable device according to claim 11, wherein the power supply signal has a first frequency band, the drive control signal has a second frequency band that is different from the first frequency band, and the separating unit separates the power supply signal from the drive control signal by separating a signal in the first frequency band from a signal in the second frequency band.

[18] 14. The body-insertable device according to claim 10, wherein the function executing unit is a sensor that acquires in-vivo information specific to a portion to be diagnosed in the body of the patient.

[19] 15. The body-insertable device according to claim 14, wherein the function executing unit includes an imaging unit that captures an image of the portion to be diagnosed in the body of the patient, control information received by a control information input unit of an external device includes information on number of frames to be captured by the imaging unit per predetermined time, and the drive control signal output from the control information input unit includes a signal for controlling the number of frames to be captured by the imaging unit per predetermined time.

[20] 16. The body-insertable device according to claim 15, wherein the function executing unit includes an illuminating unit that emits light to illuminate at least the portion to be diagnosed in the body of the patient, the control information includes information on emission time of the illuminating unit, and the drive control signal output from the control information input unit includes a signal for controlling the emission time of the illuminating unit.

[21] 17. The body-insertable device according to claim 10, further comprising a system controller that controls a state of power supply for driving the function executing unit, wherein control information input to the system controller includes information on power to be supplied to the function executing unit by the system controller, and the drive control signal output from the system controller includes a signal for

controlling power supply by the system controller.

[22] 19. The external device according to claim 18, further comprising a control information input unit that outputs the drive control signal upon receiving control information on contents about controlling a function executing unit of a body-insertable device.

[23] 20. The external device according to claim 18, wherein the power supply signal has a first frequency band, and the drive control signal has a second frequency band that is different from the first frequency band.

Conclusion

[24] The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aoki (6,476,993), Okazaki (6,194,996), Appelbaum (6,045,527), & Borza (5,755,748) each disclose superposition of data signals onto power signals for transmission. Iddan (5,604,531) discloses a capsule endoscope with an inducted power supply.

[25] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip R. Smith whose telephone number is (571) 272 6087 and whose email address is philip.smith@uspto.gov. The examiner can normally be reached between 9:00am and 5:00pm.

[26] If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (571) 272 4764.

[27] Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

[28] prs

John P. Leubecker
Primary Examiner